Attachment A

Vonage Agenda for the Advancement of VoIP 911 Deployment

Wednesday, May 3, 2005

VONAGE

**AN AGENDA FOR THE ADVANCEMENT
OF VoIP 911 DEPLOYMENT**

1. Vonage wants to provide full E-9-1-1 services to its customers and is **ready, willing and able to do so** - *if* **Vonage can purchase access to the publicly funded 9-1-1 infrastructure necessary to offer this service.**

2. Vonage is pursuing commercial negotiations for access to selective routers necessary to provide native NENA I-2 access. **Verizon is voluntarily leading the way in deployment of a solution for VoIP.**

3. The challenge in devising a VoIP 9-1-1 solution is **similar to that faced by wireless carriers** - VoIP is inherently portable and customers may use a telephone number not assigned to the geographic area of their current location.

4. **Without an FCC mandate on access - no portable VoIP product can provision automatic call delivery to dedicated 911 call takers.** VoIP users require mobile 911 access.

    *   CLECs do not have access to the pANI codes used by wireless carriers because the ILECs provide these services only to wireless carriers.

    *   CLECs and VoIP providers affiliated with CLECs face the **same limitations as Vonage does** since they do not have access to the pANI and other wireless elements.

    *   CLECs can only provide solutions for customers with **fixed locations and "in region addresses"**

    *   CLEC interconnection agreements do **not cover the entire country.** 21% of the ZIP codes in the country are served by *zero* competitive LECs. **There is no way to provision essential 911 delivery to rural VoIP users.**

5. **Vonage Needs Only the same access to 9-1-1 infrastructure as that Available to CMRS Carriers.**

6. The FCC has **clear authority** to authorize that ILECs offer this access under Section1, and 251(e)(3) of the Act as well as 47 CFR § 64.3001.

Attachment B

NENA E-911 I2 Elements List

April 15, 2005

Services Requested for E9-1-1

Summary

Vonage intends to comply with the NENA I-2 standard for delivery of Enhanced 9-1-1 calls to the correct PSAP. In order to accomplish this under the standard, Vonage or its vendors has to acquire services from the LEC in the served area.

The services required are ERQK (pseudo ANI) assignment or acquisition, ESQK provisioning service, Real time ALI update access and transport for voice (to the selective router) and data (to the ALI servers.) Where available, Vonage would like to make full use of the ESGW (shared gateway to all selective routers) structure to help facilitate transport. There may be other services locally required, which are part of the standard wireline or wireless service configuration.

ESQK Assignment

Vonage would like to have assigned the appropriate TNs to serve as ESQK pools for each PSAP. The quantity of numbers would be determined by Vonage's vendor based on the projected 9-1-1 call volume for each PSAP. Vonage would want non-dialable numbers, typically with an NXX of 511.

ESQK Provisioning

Vonage or the vendor would need access to the appropriate system or systems used to provision the ESQK pool for the selective router and the ALI database. Vonage would also request cooperation of the various PSAPs for the creation of the appropriate records in the MSAG in order to provision the ESQK pool. Vonage or the vendor would follow standard NENA formats, and would want ongoing access per the LEC standards.

Real-Time ALI Access

Vonage looks to process both native and non-native TNs in any given area. As such, Vonage would need to have access to the ALI system in order to provide time-of-call updates. The LEC would need to provide requirements for the ALI update interface or ALI steering protocols in use by the ALI system. Vonage or the vendor would need interface specifications from the LEC similar to those available for a wireless phase 2 NCAS implementation.

Transport – Voice

Vonage's first choice would be to acquire voice trunks to an ESGW that served all of the selective routers or 9-1-1 Tandems in a region. If that service is not available, Vonage would like access to ordering information, locations and specifications for trunk types for each selective router in the service area. SS7 trunk types would be preferred, but other signaling methods can be accommodated. Vonage intends to order two trunks for each selective router, one from each of two location diverse origination points. Vonage would also like to explore Internet access and a SIP gateway co-located with the selective router or 9-1-1 Tandem.

Transport – Data

For each ALI system in use in the service area, Vonage would like access to ordering information, locations and specifications for trunk types for each server, including any servers maintained at or by the PSAPs. Vonage or the vendor would order two trunks to each of the ALI server locations, one each from two location diverse origination points. Where possible, existing data links may currently exist between the vendor and the ALI servers for support of wireless 9-1-1, in which case these trunks may not be required. Standard data protocols as used for the wireless phase 2 NCAS solution would be the specifications of choice.

Attachment C

Vonage Outline for Progress on Advanced VoIP E-911 Deployment

VONAGE

OUTLINE FOR PROGRESS ON ADVANCED VOIP E-911 DEPLOYMENT

Vonage has been unable to provide E-911 service for two reasons: first, the incumbent LECs have denied Vonage the ability to interconnect with Selective Routers (the switching equipment that route emergency calls onto trunks dedicated to a particular PSAP); and second, because Vonage lacked the ability to transmit dynamic location information to the PSAPs. Although we have made progress towards resolving these issues with several of the RBOCs over the past few weeks, these solutions are not yet available on a uniform, consistent, nationwide basis, which is necessary to ensure that all Americans using VoIP have access to true E911 emergency services.

When a wireline E911 call is made, the call is sent to the ILEC tandem switch, where the Selective Router directs the call to the PSAP serving the caller based on the caller's telephone number. Except in Rhode Island, the Selective Router is owned and operated by an ILEC as part of the tariffed E-911 service it provides to the PSAP operators. Upon receipt of the call, which includes the caller's telephone number in the call signaling, the PSAP sends a query to the Automatic Location Identification ("ALI") database to retrieve the address (and other pertinent information) of the caller. The ALI database also is usually maintained by the ILEC, but can be maintained by a third party.

Access to the Selective Router is necessary but not sufficient for Vonage to provide E-911 access to its customers. Because VoIP customers can access the service from any location, Vonage faces the problem of providing dynamic, real-time location information to the PSAP. The ALI database was designed to store static location information, on the assumption that users would be "hard-wired" to the telephone network.

Wireless carriers have faced the same problem, and have developed a solution that allows real-time updating of location data using a system known as Non-Call Path Associated Signaling ("NCAS").[1] Although wireless carriers use a different method to *determine* the location of their callers than Vonage or other VoIP providers, their method of *transmitting* that information to the PSAP is readily extendable to VoIP.

The wireless NCAS system relies on the use of a pseudo-telephone number called the Emergency Service Routing Digit ("ESRD"), Emergency Service Routing Key ("ESRK"), or "pseudo-ANI" ("pANI"). These pANIs look like telephone numbers in the form NPA-211-XXXX or NPA-511-XXXX and are geographically assigned to wireless carriers by the ILEC that operates the Selective Router. When a wireless caller dials 9-1-1, the wireless carrier locates the caller, assigns an appropriate pANI to the call corresponding to that geographic location, and forwards the call, using the pANI instead of the caller's wireless phone number, to the Selective Router. The Selective Router transmits the call to the appropriate PSAP based on the pANI, and

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[1] Two other systems, known as Call Associated Signaling ("CAS") and Hybrid CAS are also used by wireless carriers, but these methodologies are not relevant to this discussion.

the PSAP makes the ALI query using the caller's pANI. At the same time that the wireless carrier passes the pANI to the Selective Router, it also stores the actual call-back number and the geographic coordinates of the calling party in its own (or its contractor's) database. When the PSAP query is received at the ALI database, the ALI database "steers" the query to the wireless carrier's (or contractor's) database for the call back number, the cell site information, and geographic coordinates of the originating caller. The ALI database formats this information into the ALI display and passes it on to the PSAP.[2]

An implementation of NCAS for VoIP providers would differ only in how the location of the caller is determined. VoIP providers, at least for now, have to rely on users to register their own locations with the provider. When a 9-1-1 call is placed, the provider would look up the caller's location in the registration database. From that point on, the rest of the NCAS process would be the same: the provider would assign a pANI appropriate to the caller's geographic location and route the call with this pANI to the Selective Router; the Selective Router would direct the call to the correct PSAP; the PSAP would use the pANI to send a query to the ALI database; the ALI database would "steer" the query to the VoIP provider's database, which would send back the actual call-back number and location; and the ALI database would reformat and return this information to the PSAP.

Although several RBOCs recently have committed to give Vonage and other VoIP providers access to their Selective Routers, and in a few cases we have made progress towards obtaining pANI assignments for use with NCAS, these arrangements have had to be negotiated on a state-by-state and carrier-by-carrier basis. In the absence of any clear legal duty to provide this access, some ILECs have been less than cooperative. Their delays and intransigence regrettably have exposed many VoIP users to unnecessary risks in emergency situations.

There clearly is no technical impediment to the access sought by Vonage. All ILECs, to our knowledge, provide access to their Selective Routers to other ILECs and CLECs operating within the geographic areas served by the tandem, and to wireless carriers; indeed, several ILECs also offer access to the Selective Router to end users.[3] Likewise, all ILECs, to our knowledge, are offering NCAS arrangements to wireless carriers.[4]

The FCC has a clear statutory mandate under Section 1 of the Communications Act of 1934 to "promot[e] safety of life and property through the use of wire and radio communica-

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[2] For more detailed information, *see* Hatfield, Dale N., *A Report on Technical and Operational Issues Impacting the Provision of Wireless Enhanced 911 Services,* Oct. 15, 2002, at 9-11. This report can be found at http://www.fcc.gov/911/enhanced/reports/

[3] *See, e.g.,* Qwest Corporation, Exchange and Network Services Price List, State of Minnesota, Section 9, pages 127 *et seq.* ("Private Switch Automatic Location Identification" Service); Verizon California Inc., Schedule Cal. P.U.C. No. A-20 ("Private Switch (PS) 9-1-1 - Emergency Telephone Service"); BellSouth Telecommunications, Inc., PSC Ky. Tariff 2A, Section A13.27.8 ("BellSouth 9-1-1 PinPoint Service").

[4] *See, e.g.,* Verizon, *Wireless Supplement to 9-1-1 Activation Guide,* available at http://www22.verizon.com/wholesale/utils/attach-redirect/?target=/wholesale/attachments/e911/wireless_guide.doc.

tion," and under Section 251(e)(3) and other statutes has plenary authority over the use of the 9-1-1 code for emergency dialing.[5] Furthermore, any refusal by an ILEC to provide VoIP providers access to the Selective Router and to pANIs and other resources associated with E-911 functionality, on the same terms and conditions as they provide such access to themselves, to other LECs, and to wireless carriers, would clearly constitute unreasonable discrimination in violation of Section 202(a) of the Act. In particular, the Commission has long held that a common carrier must demonstrate a persuasive justification for any "use and user" restrictions; *i.e.*, restricting a service to a particular category of user or a particular use, and that mere economic benefit to the carrier is not a reasonable basis for discrimination.[6] In this case, there is no difference between the services sought by Vonage and those already provided to other entities; the only difference is in the regulatory status of the users.

The Commission thus has ample legal authority to require all ILECs, to the extent they operate selective routers or 9-1-1 tandem switches, to offer to VoIP providers the same forms of interconnection to those switches that they provide to any LEC or other telecommunications carrier, on the same terms and conditions. This should specifically include access to pANIs and other signaling codes made available to any telecommunications carrier.

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[5] *Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems; Amendment of Parts 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements; Petition of the National Telecommunications and Information Administration to Amend Part 25 of the Commission's Rules to Establish Emissions Limits for Mobile and Portable Earth Stations Operating in the 1610-1660.5 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, FCC 03-290, 18 FCC Rcd 25340, paras. 12-14 (2003).

[6] *See Regulatory Policies Concerning Resale and Shared Use of Common Carrier Services and Facilities*, 60 FCC 2d 261 (1976) (services offered to end users must also be available to resellers); *Petition of First Data Resources, Inc., Regarding the Availability of Feature Group B Access Service to End Users*, Memorandum Opinion and Order, 1986 WL 291786 (1986) (services offered to carriers must also be available to end users).